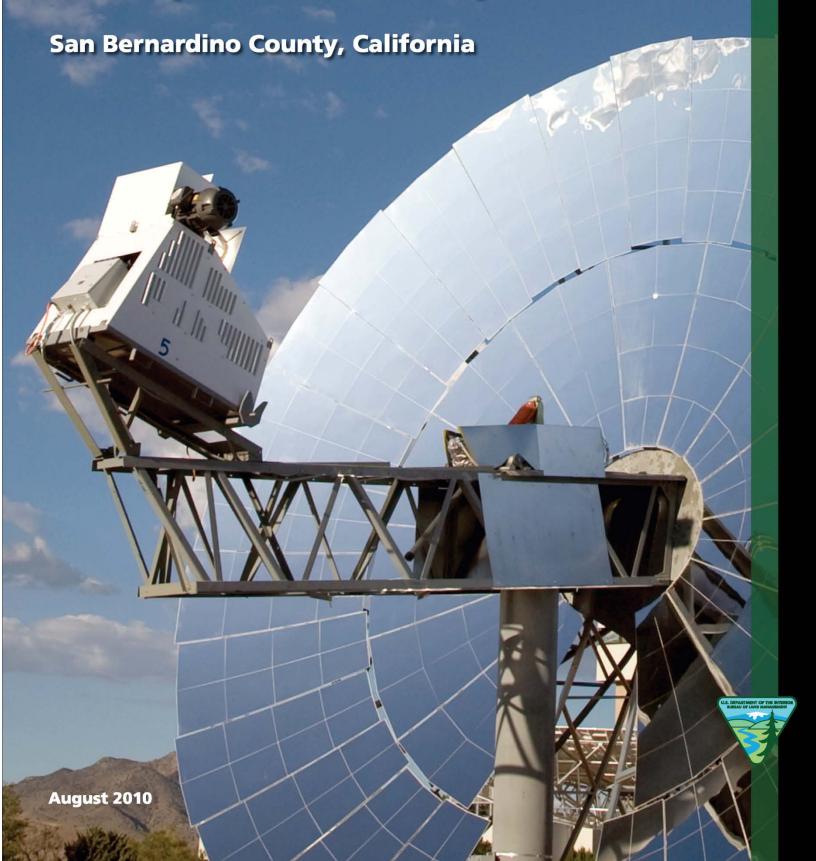
**Barstow Field Office** 

Final Environmental Impact Statement and Proposed Amendment to the California Desert Conservation Area Plan for the Calico Solar (formerly SES Solar One) Project



### **Executive Summary**

### ES.1 Background and Organization of the Final Environmental Impact Statement

In 2007, the Bureau of Land Management (BLM) and the California Energy Commission (CEC) signed a Memorandum of Understanding (MOU) that allowed the two agencies to jointly conduct environmental reviews of solar thermal power projects on BLM land in California in compliance with National Environment Policy Act (NEPA), California Environmental Quality Act (CEQA) and with other federal and state laws and regulations pertaining to power generation sites. The joint Staff Assessment/Draft Environmental Impact Statement (SA/DEIS) for the proposed Calico Solar Project and possible amendment to the California Desert Conservation Area (CDCA) Plan was released on March 30, 2010. The Environmental Protection Agency (EPA) published its Notice of Availability (NOA) in the Federal Register on April 2, 2010, initiating the 90-day public comment period. The BLM issued an additional NOA on April 19, 2010.

After release of the SA/DEIS, the BLM and the CEC decided to prepare separate environmental review documents. Accordingly, the BLM has prepared this Final Environmental Impact Statement (FEIS), and the CEC has prepared a Supplemental Staff Assessment (SSA). Upon completing the FEIS, the BLM will issue a record of decision (ROD) determining whether to approve a land use plan amendment and approve a right-of-way (ROW) grant for the proposed project. The ROD is anticipated to be completed in the fall of 2010.

#### **ES.2** Project Description

The Calico Solar Project is an electric-generating facility with a nominal capacity of 850 megawatts (MW) using concentrated solar power. The main objective of the Calico Solar Project is to provide clean, renewable, solar-powered electricity to the State of California. The electricity from the Calico Solar Project would assist the State in meeting its objectives as mandated by the California Renewable Portfolio Standard (RPS) Program and the California Global Warming Solutions Act. The project site is in the Mojave Desert in San Bernardino County, California, north of Interstate 40 (I-40), approximately 37 miles east of Barstow; approximately 57 miles northeast of Victorville; and approximately 115 miles east of Los Angeles (Figure 1-1).

The Agency Preferred Alternative is a 6,215-acre solar energy power plant project that was developed in the FEIS as a modification of the 8,230-acre Proposed Action. The Agency Preferred Alternative is also the Environmentally Preferred Alternative. This alternative would accommodate 34,000 SunCatchers generating 850 MW. The boundaries of this alternative were

developed after extensive consultation with federal and state regulatory agencies with responsibilities for management of biological and cultural resources. Accordingly, the north boundary of the project footprint has been adjusted to avoid 1,770 acres of habitat for desert tortoises, bighorn sheep, and rare plants. The south boundary was also modified to remove 245 acres from the project footprint so that no cultural resources are adversely affected. Within the project boundary, there are 6.65 acres of environmentally sensitive areas that will exclude project development to protect rare plants.

## ES.3 Organization of the Final Environmental Impact Statement

This FEIS provides detailed descriptions of the Calico Solar Project's Proposed Action, the Agency Preferred Alternative (which is also the Environmentally Preferred Alternative), two additional action alternatives, a No Action Alternative, and two land use plan (LUP) amendment alternatives. The FEIS describes the existing environmental setting and the potential impacts of the reasonable alternatives. Mitigation measures for adverse impacts are also provided. Section 1.5 provides a detailed description of the organization and content of this FEIS.

#### ES.4 Lead Agency Roles and Responsibilities

The BLM's responsibility for the Proposed Action includes compliance with the Federal Land Policy and Management Act (FLMPA) of 1976, Section 211 of the Energy Policy Act of 2005 (EPAct), and the BLM's Solar Energy Development Policy. The FLMPA authorizes the BLM to issue ROW grants for renewable energy projects. The EPAct requires that the Secretary of the Interior should seek to have approved a minimum of 10,000 MW of renewable energy generating capacity on public lands by 2015. BLM's authority extends to the BLM lands in the California Desert District, which are governed by the CDCA Plan (BLM 1999). Because the CDCA would need to be amended to allow the Calico Solar Project on the project site, the BLM would also oversee the CDCA Plan amendment process.

The CEC has the exclusive authority to certify the construction, modification, and operation of thermal electric power plants in California that generate 50 or more MW. The CEC certification is in lieu of any permit required by state, regional, or local agencies and by federal agencies to the extent permitted by federal law. The CEC must review power plant Applications for Certification (AFCs) to assess potential environmental impacts and compliance with applicable laws, ordinances, regulations, and standards. The CEC analyses regarding the Calico Solar Project in the SA/DEIS were prepared in accordance with the requirement of the CEQA.

The Applicant has applied to the Department of Energy (DOE) for a loan guarantee under Title XVII of the EPAct, as amended by Section 406 of the American Recovery and Reinvestment Act

(ARRA) of 2009, Public Law 11-5. The DOE has decided to enter into negotiation of a loan guarantee with the Applicant, and as such the DOE has become a cooperating agency in developing the FEIS.

#### ES.5 Purpose and Need

The BLM's purpose and need for action is to respond to the application under Title V of FLPMA for a ROW grant to construct, operate and decommission the Calico Solar Project and associated infrastructure in compliance with FLPMA, BLM ROW regulations, and other applicable laws. The decision for BLM is to approve, approve with modification, or deny issuance of a ROW grant to Calico Solar, Limited Liability Company (LLC) for the proposed Calico Solar Project. The BLM's actions would also include concurrent consideration of amending the CDCA Plan (BLM 1999).

The purpose and need for action by the DOE is to comply with its mandate under the EPAct to select eligible projects that meet the goals of the Act.

## ES.6 Proposed Action and Alternatives to the Proposed Action

#### ES.6.1 Alternative 1: Proposed Action

The Proposed Action is an 8,230-acre solar energy power plant (Figure 1-2) designed to produce 850 MW, as described in the AFC to the CEC (SES 2008). The Proposed Action project site contains 1,180 acres of lands that were either donated to BLM or acquired by the BLM through the federal Land and Water Conservation Fund (LWCF) program. The Proposed Action is described in detail in B.1 of the SA/DEIS and has been updated in this FEIS in Chapter 2 based on agency consultation and documented through subsequent revisions of the Plan of Development (POD) (Tessera Solar 2010).

Due to limitations in Southern California Edison's (SCE) transmission system, the Proposed Action would be developed in two phases. Phase I would include 11,000 SunCatchers located on approximately 2,320 acres and would generate 275 MW of solar energy. For Phase I, the project would include a new on-site 230-kilovolt (kV) Calico electrical substation near the center of the project area, and an approximately 2-mile-long 230-kV transmission line from the proposed Calico Substation to SCE's existing Pisgah Substation. Phase I would require an expansion and upgrade to the existing Pisgah Substation to increase the voltage to 500 kV. Phase I would also require installation of a fiber optic link on SCE's Pisgah to Lugo and Pisgah to Gale transmission lines.

Phase II would include 23,000 SunCatchers located on approximately 5,910 acres and would generate 575 MW of solar energy. Phase II of the project would require removing 65 miles of the existing 220-kV Lugo-Pisgah No. 2 transmission line between the Lugo Substation and the Pisgah Substation and then replacing the transmission line with approximately 65 miles of 500-kV transmission line between the substations. Approximately 10 of these 65 miles would require new ROW. Additionally, Phase II would require either an expansion of the Pisgah Substation or a newly located substation. These SCE upgrades are considered to be a reasonably foreseeable future action in this FEIS.

#### ES.6.2 Alternative 1a: Agency Preferred Alternative

The Agency Preferred Alternative is a 6,215-acre solar energy power plant project that was developed in the FEIS as a modification of the 8,230-acre Proposed Action. This alternative would accommodate 34,000 SunCatchers and generate 850 MW. The boundaries of this alternative were developed after extensive consultation with federal and state regulatory agencies with responsibilities for management of biological and cultural resources. Accordingly, the north boundary of the project footprint has been redesigned to avoid 1,770 acres of habitat for desert tortoises, bighorn sheep, and rare plants. The south boundary was also modified so that no cultural resources eligible for listing on the National Register of Historic Places are adversely affected (removal of 245 acres from the Proposed Project footprint). Within the project boundary, there are 6.65 acres of environmentally sensitive areas that will exclude project development to protect rare plants. The Agency Preferred Alternative is also the Environmentally Preferred Alternative.

#### ES.6.3 Alternative 2: Reduced Acreage Alternative

The Reduced Acreage Alternative is a 2,600-acre solar energy power plant project (Figure 2-8) and is described in detail in Chapter B.1 of the SA/DEIS. This alternative would accommodate approximately 11,000 SunCatchers. As discussed in the SA/DEIS, the Reduced Acreage Alternative was developed to avoid sensitive cultural resources, areas that were mapped as occupied desert tortoise habitat (live tortoise and/or active burrows and sign), and sensitive desert washes and donated and acquired lands. The Reduced Acreage Alternative also avoids donated and LWCF-acquired lands, and responds to public scoping comments requesting a scaled-down project footprint.

## ES.6.4 Alternative 3: Avoidance of Donated and Acquired Lands Alternative

The Avoidance of Donated and Acquired Lands Alternative was developed to avoid all donated land and acquired lands funded by the federal LWCF and would occupy approximately 7,050 acres (Figure 2-10). In the SA/DEIS, this alternative was estimated to accommodate approximately 28,800 SunCatchers to generate 720 MW. Following publication of the SA/DEIS, the Applicant conducted additional analysis of site design and determined that 34,000 SunCatchers could be accommodated to generate 850 MW while still avoiding the donated and acquired lands.

## ES.6.5 Alternative 4: No Action: Deny Calico Solar Project ROW Grant/No CDCA Plan Amendment

Under this No Action Alternative, the BLM would deny the Calico Solar Project ROW grant and would not amend the CDCA Plan. This is the only alternative in this FEIS that does not include a proposed amendment to the CDCA Plan. As a result, the proposed Calico Solar Project would not be constructed on the project site, and BLM would continue to manage the site consistent with the agency's framework of a program of multiple use and sustained yield, and the maintenance of environmental quality (43 United States Code [USC] 1781[b]) in conformance with applicable statutes, regulations, policies, and the existing CDCA Plan. Other renewable energy projects may be constructed in the CDCA Plan area to meet California renewable energy portfolio mandates. However, these future renewable projects would necessitate a future CDCA Plan amendment for implementation.

# ES.6.6 Alternative 5: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Allow Other Solar Energy Projects on the Project Site

Under this LUP amendment alternative, the BLM would deny the Calico Solar Project ROW grant and would amend the CDCA Plan to allow other solar projects on the 8,230-acre project site described under the Proposed Action. The BLM would continue to manage the site consistent with the CDCA Plan and approve an amendment to the Energy Production and Utility Corridors Element of the plan to allow future solar energy development on the project site. Future ROW grant applications for solar power development would require the BLM to conduct a NEPA analysis for a proposed project, but the agency would not be required to conduct a NEPA analysis for a CDCA plan amendment for siting.

# ES.6.7 Alternative 6: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Prohibit Other Solar Energy Projects on the Project Site

Under this LUP amendment alternative, the BLM would deny the Calico Solar Project ROW grant and would amend the CDCA Plan to prohibit other solar projects on the 8,230-acre project site described under the Proposed Action. The BLM would continue to manage the site consistent with the amended CDCA Plan. In the absence of the Proposed Action, other renewable energy projects may be constructed in other locations in the CDCA Plan area to meet renewable energy portfolio mandates.

#### ES.6.8 Upgrades to the SCE Transmission Line

As of publication of this FEIS, a ROW application from SCE for the transmission system upgrades required for Phase II of the proposed project has not been submitted to BLM. Therefore, the SCE transmission system upgrades are not considered connected actions as described by NEPA. In this document, the BLM has retained the system upgrades as reasonably foreseeable future actions. These upgrades are described briefly below.

#### ES.6.9 Proposed SCE Upgrades for up to 275 MW of Solar Energy Generation

Construction of the 275-MW Phase I of the Proposed Action would require an upgrade of the existing Pisgah Substation to a 500/220-kV substation designed for four 500/220-kV transformer banks. An upgrade would also be required to implement Phase 1 of the Agency Preferred Alternative, the Reduced Acreage Alternative, and the Avoidance of Donated and Acquired Lands Alternative. These upgrades would require an approved ROW grant from BLM.

#### ES.6.10 Proposed SCE Upgrades for more than 275 MW of Solar Energy Generation

Delivery of renewable power above 275 MW to the SCE system would require the construction of additional transmission line upgrades by SCE. These upgrades would be required for transmission of power generated from Phase II of the Proposed Action; Phase II of the Agency Preferred Alternative, and Phase II of the Avoidance of Donated and Acquired Lands Alternative.

The California Public Utilities Commission (CPUC) is the lead agency for CEQA compliance, and the BLM is the lead agency for NEPA compliance on these SCE transmission line system

upgrades. The SCE would need a Certificate of Public Convenience and Necessity from the CPUC for these network upgrades in addition to an approved ROW grant from the BLM.

The upgrades required for power transmission beyond 275 MW consists of expansion of the Pisgah Substation or construction of a new substation and the installation of new transmission facilities. The major components include:

- Extending the existing Lugo 500-kV Substation east and west Buses to provide for a new 500-kV transmission line position.
- Removing 65 miles of the existing 220-kV Lugo-Pisgah No. 2 transmission line between Lugo Substation and Pisgah Substation.
- Constructing approximately 65 miles of new 500-kV transmission line between the Lugo and Pisgah Substations. Approximately 55 miles of the new transmission line would use the ROW vacated by the removal of the existing 220-kV line, and approximately 10 miles would require new ROW.
- Looping the existing Eldorado-Lugo 500-kV transmission line into the expanded Pisgah 500-kV Substation to form the Eldorado-Pisgah 500-kV transmission line and the 500-kV Lugo-Pisgah No. 1 transmission line.
- New ROW to accommodate a new 500/220-kV Pisgah Substation, estimated to require 0.6 acre adjacent to the existing substation location. Alternatively, SCE may propose construction of a new substation along the transmission line south of I-40.
- Update existing ROW to support construction of the new 500-kV Lugo-Pisgah No. 2 transmission line within the existing ROW.
- Approximately 10 miles of new ROW (near Lugo, California) to support construction of the new 500-kV Lugo-Pisgah No. 2 transmission line when use of the existing ROW is not feasible.

#### **ES.6.11 Other Renewable Resource Projects**

A large number of renewable projects have been proposed on BLM-managed land, state land, and private land in California. As of January 2010, there were 244 renewable projects proposed in California that were in various stages of the environmental review process or under construction. As of December 2009, 49 of these projects, representing approximately 10,500 MW, were planning on requesting ARRA funds from the federal government. Solar, wind, and geothermal development applications have requested use of BLM land, including

approximately 1 million acres of the California desert (Figure A-18). State and private lands have also been approached for renewable solar and wind projects.

#### ES.7 Summary of the Affected Environment

The Calico Solar Project site is located in an undeveloped area of San Bernardino County, California, approximately 37 miles east of Barstow, California and north of I-40, and between approximately 1,925 to 3,050 feet above mean sea level. The Proposed Action is located on approximately 8,230 acres of public land administered by the BLM and is subject to the applicable land use management requirements in the CDCA Plan (BLM 1999).

The project site slopes gently to the northeast, with steeper sloping beyond the northeast boundary line. The central and western portions of the project site are characterized by low and moderate relief alluvial zones and washes. The few existing residences and farming areas are located approximately 2 miles to the east and 4 miles west of the project site.

The climate of the San Bernardino County is classified as a high-desert climate characterized by low precipitation, hot summers and mild to cold winters, low humidity, and strong temperature inversions. It is separated from the Pacific coastal regions by the San Gabriel and San Bernardino mountain ranges to the south and Tehachapi Mountains to the west. The area's climatic conditions are strongly influenced by the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure center over the eastern Pacific. This high-pressure system effectively blocks out most mid-latitude storms, except in winter when the ridge is weaker and farther south. The coastal mountains to the southwest of San Bernardino County also have a major influence on climate, serving as a meteorological boundary that effectively removes moisture from the marine air flowing inland from the Pacific.

The lands within the project site are primarily designated Multiple-Use Class M (moderate), with a small amount of Multiple-Use Class L (limited) pursuant to the CDCA Plan, and are zoned Resource Conservation by San Bernardino County. Within the community of Newberry Springs, located approximately 17 miles west of the project site, the existing land use consists primarily of single-family homes, including a number of mobile homes on individual lots, recreation vehicle parks, and commercial lots. There are some residences within sight of the project site to the east and southwest, although the density of residences becomes higher nearer to the communities of Newberry Springs and Daggett.

There are several BLM-designated open routes located within the project site that are used currently by recreation users and owners of adjacent private lands. The project site contains a variety of vegetation types, including four special or sensitive species: white-margined beardtongue, crucifixion thorn, small-flowered androstephium, and Utah vine milkweed. A total of nine special-status wildlife species were identified within or in proximity to the project site;

these include desert tortoise, Mojave fringe-toed lizard, American badger, loggerhead shrike, Le Conte's thrasher, Bendire's thrasher, burrowing owl, golden eagle, and Swainson's hawk.

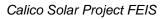
There are 404 cultural resource sites within the Calico Solar Project area of potential effect (APE). Sixty-nine resources were eliminated through project re-design in 2008-2009. The remaining 335 cultural resources within the project APE include 119 archaeological sites, 2 indeterminate rock feature sites, 206 archaeological isolates, and 10 historic built environment resources. The BLM has determined that 3 of these cultural resource sites are eligible for listing on the National Register of Historic Places.

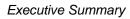
Four Wilderness Areas (WAs) and one Wilderness Study Area (WSA) are located in the project vicinity (Figure A-9). The Cady Mountains WSA has been documented by a wilderness study report that shows the location of the individual WSA, a description of its wilderness values, and BLM's recommendation for its future suitability as wilderness as proposed by the Secretary of Interior on June 12, 1991 (BLM 2009a). There are also two areas of critical environmental concern (ACECs) in the project area (Figure A-9). The Pisgah ACEC is adjacent to the site's eastern/southeastern boundary. The Rodman Mountains Cultural Area ACEC is located southwest of the site, in the Rodman Mountains WA. The Ord-Rodman ACEC consists of the public lands within the Ord-Rodman Desert Wildlife Management Area (DWMA) (Figure A-9). This DWMA was established in the West Mohave Plan (WEMO) specifically for the conservation of the desert tortoise and contains designated critical habitat for that species. The Superior-Cronese DWMA, located northeast of the project vicinity (Figure A-2), was also established by the WEMO and includes designated critical habitat for the conservation and recovery of the desert tortoise.

There are approximately 1,180 acres of land within the project boundary that were donated to the BLM or that were acquired through the LWCF program (Figure A-8). The 2009 BLM Interim Policy Memorandum on donated and acquired lands (BLM 2009b) identifies the management policy for donated and acquired lands and is summarized in Section 3.9, Land Use.

# ES.8 Environmental Consequences of the Proposed Action, Including Cumulative Impacts

Table ES-1 summarizes, by alternative, the environmental impacts that would occur as a result of the construction of the Calico Solar Project. The impacts are presented according to each environmental resource element. A detailed assessment of potential impacts of the three action alternatives, the No Action Alternative, and the two LUP amendment alternatives are provided in Chapter 4 of this FEIS.





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Table ES-1 Summary of Impacts of Calico Solar Project Alternatives

Resource Element	Alternative 1: Proposed Action	Alternative 1a: Agency Preferred Alternative (Environmentally Preferred Alternative)	Alternative 2: Reduced Acreage Alternative	Alternative 3: Avoidance of Donated and Acquired Lands Alternative	Alternative 4: No Action: Deny Calico Solar Project ROW Grant/ No CDCA Plan Amendment	Alternative 5: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Allow other Solar Energy Projects on the Project Site	Alternative 6: LUP Amendment Alternative: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Prohibit other Solar Energy Projects on the Project Site
Air Quality and Climate	)				,		
	Direct and indirect impacts due to minimal contribution to violations of the most stringent PM <sub>10</sub> standards during construction and operation; cumulative adverse short-term construction and operation impacts on air quality	Direct and indirect impacts due to minimal contribution to violations of the most stringent PM <sub>10</sub> standards during construction and operation; cumulative adverse short-term construction and operation impacts on air quality	Direct and indirect impacts due to minimal contribution to violations of the most stringent PM <sub>10</sub> standards during construction and operation; cumulative adverse short-term construction and operation impacts on air quality	Direct and indirect impacts due to minimal contribution to violations of the most stringent PM <sub>10</sub> standards during construction and operation; cumulative adverse short-term construction and operation impacts on air quality	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for minimal contribution to violations of the most stringent PM <sub>10</sub> standards during construction and operation of other solar energy projects; potential for cumulative short-term construction and operation impacts on air quality if another solar energy project is developed on the project site.	No direct, indirect, or cumulative impacts on air quality since the site would not be developed
Biological Resources	1						
General vegetation	Short-term and long-term direct and indirect adverse impacts on vegetation onsite due to construction and maintenance activities, and the spread of invasive, non-native, and/or noxious weeds; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on vegetation onsite due to construction and maintenance activities, and the spread of invasive, non-native, and/or noxious weeds; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on vegetation onsite due to construction and maintenance activities, and the spread of invasive, non-native, and/or noxious weeds; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on vegetation onsite due to construction and maintenance activities, and the spread of invasive, non-native, and/or noxious weeds; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Invasive, Non-native and Noxious Weeds	Potential short-term and long-term direct and indirect adverse impacts from the spread of invasive, non-native and/or noxious weeds; incremental contribution to significant cumulative adverse impacts	Potential short-term and long-term direct and indirect adverse impacts from the spread of invasive, non-native and/or noxious weeds; incremental contribution to significant cumulative adverse impacts	Potential short-term and long-term direct and indirect adverse impacts from the spread of invasive, non-native and/or noxious weeds; incremental contribution to significant cumulative adverse impacts	Potential short-term and long-term direct and indirect adverse impacts from the spread of invasive, non-native and/or noxious weeds; incremental contribution to significant cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
General wildlife	Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss; incremental contribution to cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on wildlife on the project site and in the immediate project vicinity due to increased trampling, predation, noise, light, traffic and habitat loss; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed

Resource Element	Alternative 1: Proposed Action	Alternative 1a: Agency Preferred Alternative (Environmentally Preferred Alternative)	Alternative 2: Reduced Acreage Alternative	Alternative 3: Avoidance of Donated and Acquired Lands Alternative	Alternative 4: No Action: Deny Calico Solar Project ROW Grant/ No CDCA Plan Amendment	Alternative 5: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Allow other Solar Energy Projects on the Project Site	Alternative 6: LUP Amendment Alternative: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Prohibit other Solar Energy Projects on the Project Site
Birds	Short-term and long-term direct and indirect adverse impacts on birds due to habitat loss, increased noise, lighting, glare, bird collisions, and electrocution; incremental contribution to significant cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on birds due to habitat loss, increased noise, lighting, glare, bird collisions, and electrocution; incremental contribution to significant cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on birds due to habitat loss, increased noise, lighting, glare, bird collisions, and electrocution; incremental contribution to significant cumulative adverse impacts	Short-term and long-term direct and indirect adverse impacts on birds due to habitat loss, increased noise, lighting, glare, bird collisions, and electrocution; incremental contribution to significant cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Wildlife movement corridors	Short- and long-term direct and indirect adverse impacts on wildlife movement corridors and habitat linkages that are currently available on the project site because of the substantial barrier to wildlife movement that would be posed by the fenced solar field; incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages	Short- and long-term direct and indirect adverse impacts on wildlife movement corridors and habitat linkages that are currently available on the project site because of the substantial barrier to wildlife movement that would be posed by the fenced solar field; incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages	Short- and long-term direct and indirect adverse impacts on wildlife movement corridors and habitat linkages that are currently available on the project site because of the substantial barrier to wildlife movement that would be posed by the fenced solar field; incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages	Short- and long-term direct and indirect adverse impacts on wildlife movement corridors and habitat linkages that are currently available on the project site because of the substantial barrier to wildlife movement that would be posed by the fenced solar field; incremental contribution to the loss and degradation of wildlife movement corridors and habitat linkages	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status plants: white-margined beardtongue	Impacts would be avoided through on-site protection in Environmentally Sensitive Areas; other foreseeable future projects could result in significant adverse cumulative impacts	Impacts would be avoided through on-site protection in Environmentally Sensitive Areas; other foreseeable future projects could result in significant adverse cumulative impacts	Impacts would be avoided through on-site protection in Environmentally Sensitive Areas; other foreseeable future projects could result in significant adverse cumulative impacts	Impacts would be avoided through on-site protection in Environmentally Sensitive Areas; other foreseeable future projects could result in significant adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status plants: other	reduction, fragmentation, and	Direct and indirect adverse short- term and long-term impacts due to reduction, fragmentation, and degradation of suitable habitats on the project site and in the immediate project vicinity; incremental contribution to an adverse cumulative impact to small-flowered androstephium	reduction, fragmentation, and	reduction, fragmentation, and	be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status reptiles: banded Gila monster	Direct and indirect adverse short- term and long-term impacts on banded Gila monsters, if they do occur on the project site; incremental contribution to cumulative adverse impacts	Direct and indirect adverse short- term and long-term impacts on banded Gila monsters, if they do occur on the project site; incremental contribution to cumulative adverse impacts	Direct and indirect adverse short- term and long-term impacts on banded Gila monsters, if they do occur on the project site; incremental contribution to cumulative adverse impacts	Direct and indirect adverse short- term and long-term impacts on banded Gila monsters, if they do occur on the project site; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed

Resource Element	Alternative 1: Proposed Action	Alternative 1a: Agency Preferred Alternative (Environmentally Preferred Alternative)	Alternative 2: Reduced Acreage Alternative	Alternative 3: Avoidance of Donated and Acquired Lands Alternative	Alternative 4: No Action: Deny Calico Solar Project ROW Grant/ No CDCA Plan Amendment	Alternative 5: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Allow other Solar Energy Projects on the Project Site	Alternative 6: LUP Amendment Alternative: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Prohibit other Solar Energy Projects on the Project Site
Special-status reptiles: desert tortoise	Direct and indirect short-term and long-term adverse impacts on desert tortoises on the project site, in the immediate project vicinity, and at translocation receptor sites, and to desert tortoise critical habitat within the Ord-Rodman DWMA; incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity	Direct and indirect short-term and long-term adverse impacts on desert tortoises on the project site, in the immediate project vicinity, and at translocation receptor sites, and to desert tortoise critical habitat within the Ord-Rodman DWMA; incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity	in the immediate project vicinity,	Direct and indirect short-term and long-term adverse impacts on desert tortoises on the project site, in the immediate project vicinity, and at translocation receptor sites, and to desert tortoise critical habitat within the Ord-Rodman DWMA; incremental contribution to significant cumulative adverse impacts on desert tortoise habitat and connectivity	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status reptiles: Mojave fringe-toed lizard	Direct and indirect, short-term and long-term adverse impacts on Mojave fringe-toed lizards and their habitat; incremental contribution to potentially significant adverse cumulative impacts	Direct and indirect, short-term and long-term adverse impacts on Mojave fringe-toed lizards and their habitat; incremental contribution to potentially significant adverse cumulative impacts	Direct and indirect, short-term and long-term adverse impacts on Mojave fringe-toed lizards and their habitat; incremental contribution to potentially significant adverse cumulative impacts	Direct and indirect, short-term and long-term adverse impacts on Mojave fringe-toed lizards and their habitat; incremental contribution to potentially significant adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status birds: Bendire's thrasher	Direct and indirect, short-term and long-term adverse impacts on Bendire's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Bendire's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Bendire's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Bendire's thrashers; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status birds: burrowing owl	Direct and indirect, short-term and long-term adverse impacts on burrowing owls; incremental contribution to potentially significant cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on burrowing owls; incremental contribution to potentially significant cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on burrowing owls; incremental contribution to potentially significant cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on burrowing owls; incremental contribution to potentially significant cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status birds: golden eagle	Direct and indirect, short-term and long-term adverse impacts on golden eagles; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	Direct and indirect, short-term and long-term adverse impacts on golden eagles; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	Direct and indirect, short-term and long-term adverse impacts on golden eagles; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	Direct and indirect, short-term and long-term adverse impacts on golden eagles; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status birds: Le Conte's thrasher	Direct and indirect, short-term and long-term adverse impacts on Le Conte's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Le Conte's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Le Conte's thrashers; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on Le Conte's thrashers; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed

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Special-status birds: mountain plover	Negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers; negligible contribution to cumulative adverse impacts	Negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers; negligible contribution to cumulative adverse impacts	Negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers; negligible contribution to cumulative adverse impacts	Negligible direct and indirect, short-term and long-term adverse impacts on mountain plovers; negligible contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status birds: Swainson's hawk	Negligible direct and indirect short-term and long-term adverse impacts on any Swainson's hawks occurring in the project vicinity; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	Negligible direct and indirect short-term and long-term adverse impacts on any Swainson's hawks occurring in the project vicinity; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	occurring in the project vicinity; incremental contribution to potentially significant cumulative	Negligible direct and indirect short-term and long-term adverse impacts on any Swainson's hawks occurring in the project vicinity; incremental contribution to potentially significant cumulative impact through the loss of foraging habitat	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status mammals: American badger	Direct and indirect, short-term and long-term adverse impacts on American badgers on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on American badgers on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on American badgers on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on American badgers on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status mammals: desert kit fox	Direct and indirect, short-term and long-term adverse impacts on desert kit foxes on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on desert kit foxes on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on desert kit foxes on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	Direct and indirect, short-term and long-term adverse impacts on desert kit foxes on the project site and in the immediate project vicinity; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status mammals: Nelson's bighorn sheep	Direct and indirect, short-term and long-term adverse impacts on Nelson's bighorn sheep occurring in the Cady Mountains to the north of the project site; incremental contribution to the cumulative loss of foraging habitat in the Cady Mountains and significant adverse cumulative impacts on populations in the West Mojave Planning Area		of the project site; incremental contribution to the cumulative loss of foraging habitat in the Cady Mountains and significant adverse	Direct and indirect, short-term and long-term adverse impacts on Nelson's bighorn sheep occurring in the Cady Mountains to the north of the project site; incremental contribution to the cumulative loss of foraging habitat in the Cady Mountains and significant adverse cumulative impacts on populations in the West Mojave Planning Area	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Special-status mammals: special-status bats	Negligible short-term and long- term adverse impacts on special- status bats that forage over the project site; incremental contribution to cumulative adverse impacts	Negligible short-term and long- term adverse impacts on special- status bats that forage over the project site; incremental contribution to cumulative adverse impacts	Negligible short-term and long- term adverse impacts on special- status bats that forage over the project site; incremental contribution to cumulative adverse impacts	Negligible short-term and long- term adverse impacts on special- status bats that forage over the project site; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed

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Climate Change	Minor contributions to GHG	Minor contributions to GHG	Minor contributions to GHG	Minor contributions to GHG	Long-term, adverse direct and	Potential for long-term, beneficial	Long-term, adverse direct and
	emissions and reduction of soil carbon sequestration, but overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system; incremental contribution to cumulative beneficial impacts	emissions and reduction of soil carbon sequestration, but overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system; incremental contribution to cumulative beneficial impacts	emissions and reduction of soil carbon sequestration, but overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system; incremental contribution to cumulative beneficial impacts	emissions and reduction of soil carbon sequestration, but overall long-term, beneficial direct and indirect impacts due to a net reduction in GHG emissions across the electricity system; incremental contribution to cumulative beneficial impacts	indirect impacts due to lack of net reduction in GHG emissions; no cumulative impacts	indirect impacts due to a net reduction in GHG emissions across the electricity system if other solar energy projects are constructed; no cumulative impacts	indirect impacts due to lack of net reduction in GHG emissions; no cumulative impacts
Cultural Resources and	d Paleontology						
	Significant adverse effects to three cultural resources with the potential for listing on the National Register of Historic Places; permanent long-term adverse direct, indirect, and cumulative impacts on other cultural resources due to construction and decommissioning activities and increased human access	No adverse effects to any cultural resources with the potential for listing on the National Register of Historic Places; permanent long-term adverse direct, indirect, and cumulative impacts on other cultural resources due to construction activities and increased human access	Significant adverse effect to one cultural resource with potential for listing on the National Register of Historic Places; permanent long-term adverse direct, indirect, and cumulative impacts on other cultural resources due to construction activities and increased human access	Significant adverse effects to two cultural resources with potential for listing on the National Register of Historic Places; permanent long-term adverse direct, indirect, and cumulative impacts on other cultural resources due to construction activities and increased human access	No direct, indirect, or cumulative impacts since the site would not be developed	No adverse effects to historic properties; potential for permanent long-term adverse direct, indirect, and cumulative impacts on other cultural resources if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Fire and Fuels							
	Adverse direct and indirect impacts due to increases in invasive weeds and human ignition sources; incremental contribution to cumulative adverse impacts	Adverse direct and indirect impacts due to increases in invasive weeds and human ignition sources; incremental contribution to cumulative adverse impacts	Adverse direct and indirect impacts due to increases in invasive weeds and human ignition sources; incremental contribution to cumulative adverse impacts	Adverse direct and indirect impacts due to increases in invasive weeds and human ignition sources; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for adverse direct and indirect impacts due to increases in invasive weeds and human ignition sources if other solar energy projects are constructed; potential for incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed
Geology, Soils, Topogr	raphy, and Mineral Resources						
Mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources	No direct, indirect, or cumulative impacts due to absence of mineral resources
Soils	direct and indirect impacts on soils from clearing of vegetation, diminished soil productivity from topsoil loss, loss of cryptobiotic	Long-term and short-term adverse direct and indirect impacts on soils from clearing of vegetation, diminished soil productivity from topsoil loss, loss of cryptobiotic soil and desert pavement, erosion, and compaction; incremental contribution to cumulative adverse impacts on soil resources	Long-term and short-term adverse direct and indirect impacts on soils from clearing of vegetation, diminished soil productivity from topsoil loss, loss of cryptobiotic soil and desert pavement, erosion, and compaction; incremental contribution to cumulative adverse impacts on soil resources	Long-term and short-term adverse direct and indirect impacts on soils from clearing of vegetation, diminished soil productivity from topsoil loss, loss of cryptobiotic soil and desert pavement, erosion, and compaction; incremental contribution to cumulative adverse impacts on soil resources	No direct, indirect, or cumulative impacts since the site would not be developed	No direct, indirect, or cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed

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Geologic hazards		Geologic hazards include the potential for ground shaking and a low likelihood of volcanic eruptions		Geologic hazards include the potential for ground shaking and a low likelihood of volcanic eruptions	-	Avoidance of risks associated with geologic hazards	Avoidance of risks associated with geologic hazards since the site would not be developed
Grazing and Wild Horse	es and Burros						
Agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands	No direct, indirect, or cumulative impacts due to absence of agricultural lands
Grazing	Negligible direct, indirect, or cumulative impacts due to the low quality of grazing vegetation present and the fact that grazing is not currently occurring at the site	Negligible direct, indirect, or cumulative impacts due to the low quality of grazing vegetation present and the fact that grazing is not currently occurring at the site	Negligible direct, indirect, or cumulative impacts due to the low quality of grazing vegetation present and the fact that grazing is not currently occurring at the site	Negligible direct, indirect, or cumulative impacts due to the low quality of grazing vegetation present and the fact that grazing is not currently occurring at the site	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for negligible direct, indirect, or cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Wild horses and burros	Negligible direct, indirect, or cumulative impacts due to absence of designated HAs or HMAs, or any observations of wild horses and burros	Negligible direct, indirect, or cumulative impacts due to absence of designated HAs or HMAs, or any observations of wild horses and burros	Negligible direct, indirect, or cumulative impacts due to absence of designated HAs or HMAs, or any observations of wild horses and burros	Negligible direct, indirect, or cumulative impacts due to absence of designated HAs or HMAs, or any observations of wild horses and burros	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for negligible direct, indirect, or cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Land Use							
	Direct and indirect long-term, adverse impacts due to the exclusion of other public land uses and the disturbance of 1,180 acres of donated and acquired lands; incremental contribution to cumulative adverse impacts	Direct and indirect long-term, adverse impacts due to the exclusion of other public land uses and the disturbance of 1,020 acres of donated and acquired lands; incremental contribution to cumulative adverse impacts	Direct and indirect long-term, adverse impacts due to the exclusion of other public land uses; no direct or indirect impacts on donated and acquired lands due to avoidance of those lands; incremental contribution to cumulative adverse impacts	Direct and indirect long-term, adverse impacts due to the exclusion of other public land uses; no direct or indirect impacts on donated and acquired lands due to avoidance of those lands; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct and indirect long-term, adverse impacts due to the exclusion of other public land uses and the disturbance of donated and acquired lands if other solar energy projects are constructed; potential for incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed
Noise and Vibration							
	Direct and indirect adverse impacts created by short-term construction activities and by normal long-term operation of the solar power plant; no cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project	Direct and indirect adverse impacts created by short-term construction activities and by normal long-term operation of the solar power plant; no cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project	Direct and indirect adverse impacts created by short-term construction activities and by normal long-term operation of the solar power plant; no cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project	Direct and indirect adverse impacts created by short-term construction activities and by normal long-term operation of the solar power plant; no cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct and indirect adverse impacts if other solar energy projects are constructed; no cumulative impacts due to location of other potential projects in the region immediately surrounding the sensitive receivers for the project	No direct, indirect, or cumulative impacts since the site would not be developed

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Public Health and Safe	ty and Hazardous Materials						
Hazardous materials	Minimal potential for on-site and off-site direct and indirect impacts due to handling and storage of hazardous materials, including hydrogen; no cumulative impacts due to small amounts and low hazard of the hazardous chemicals to be stored at the facility	Minimal potential for on-site and off-site direct and indirect impacts due to handling and storage of hazardous materials, including hydrogen; no cumulative impacts due to small amounts and low hazard of the hazardous chemicals to be stored at the facility	Minimal potential for on-site and off-site direct and indirect impacts due to handling and storage of hazardous materials, including hydrogen; no cumulative impacts due to small amounts and low hazard of the hazardous chemicals to be stored at the facility	Minimal potential for on-site and off-site direct and indirect impacts due to handling and storage of hazardous materials, including hydrogen; no cumulative impacts due to small amounts and low hazard of the hazardous chemicals to be stored at the facility	No direct, indirect, or cumulative impacts since the site would not be developed	Minimal potential for on-site and off-site direct, indirect, and cumulative impacts if other solar energy projects are constructed that handle and store hazardous materials	No direct, indirect, or cumulative impacts since the site would not be developed
Waste management	Direct and indirect impacts due to increase in disposal of non-hazardous wastes; no cumulative impacts due to modest quantities of waste and employment of waste recycling	Direct and indirect impacts due to increase in disposal of non-hazardous wastes; no cumulative impacts due to modest quantities of waste and employment of waste recycling	Direct and indirect impacts due to increase in disposal of non-hazardous wastes; no cumulative impacts due to modest quantities of waste and employment of waste recycling	Direct and indirect impacts due to increase in disposal of non-hazardous wastes; no cumulative impacts due to modest quantities of waste and employment of waste recycling	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Emergency response	No adverse direct or indirect impacts on emergency medical services or law enforcement due to proposed safety procedures, employee training, proposed onsite security measures; incremental contribution to cumulative adverse impacts on emergency response	No adverse direct or indirect impacts on emergency medical services or law enforcement due to proposed safety procedures, employee training, proposed onsite security measures; incremental contribution to cumulative adverse impacts on emergency response	No adverse direct or indirect impacts on emergency medical services or law enforcement due to proposed safety procedures, employee training, proposed onsite security measures; incremental contribution to cumulative adverse impacts on emergency response	No adverse direct or indirect impacts on emergency medical services or law enforcement due to proposed safety procedures, employee training, proposed onsite security measures; incremental contribution to cumulative adverse impacts on emergency response	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative adverse impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Recreation							
	Direct and indirect short-term and long-term adverse impacts due to loss of recreational access to the project site, reducing scenic values and altering the recreational experience; incremental contribution to cumulative adverse impacts	Direct and indirect short-term and long-term adverse impacts due to loss of recreational access to the project site, reducing scenic values and altering the recreational experience; incremental contribution to cumulative adverse impacts	Direct and indirect short-term and long-term adverse impacts due to loss of recreational access to the project site, reducing scenic values and altering the recreational experience; incremental contribution to cumulative adverse impacts	Direct and indirect short-term and long-term adverse impacts due to loss of recreational access to the project site, reducing scenic values and altering the recreational experience; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct and indirect short-term and long-term adverse impacts if other solar energy projects are constructed; potential for incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed
Socioeconomics and E	Environmental Justice						
Population and employment	Negligible beneficial short-term and long-term direct and indirect impacts from increased employment and potential increase in local population; incremental contribution to cumulative beneficial impacts	Negligible beneficial short-term and long-term direct and indirect impacts from increased employment and potential increase in local population; incremental contribution to cumulative beneficial impacts	Negligible beneficial short-term and long-term direct and indirect impacts from increased employment and potential increase in local population; incremental contribution to cumulative beneficial impacts	Negligible beneficial short-term and long-term direct and indirect impacts from increased employment and potential increase in local population; incremental contribution to cumulative beneficial impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct and indirect short-term and long-term adverse impacts if other solar energy projects are constructed; potential for incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed

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Environmental justice	No direct, indirect, or cumulative socioeconomic impacts on low-income or minority populations	No direct, indirect, or cumulative socioeconomic impacts on low-income or minority populations	No direct, indirect, or cumulative socioeconomic impacts on low-income or minority populations	No direct, indirect, or cumulative socioeconomic impacts on low-income or minority populations	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, or cumulative socioeconomic impacts on low-income or minority populations if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Housing supply	No direct, indirect, or cumulative impacts on housing supply due to adequate existing housing in the area	No direct, indirect, or cumulative impacts on housing supply due to adequate existing housing in the area	No direct, indirect, or cumulative impacts on housing supply due to adequate existing housing in the area	No direct, indirect, or cumulative impacts on housing supply due to adequate existing housing in the area	No direct, indirect, or cumulative impacts since the site would not be developed	No direct, indirect, or cumulative impacts on housing supply due to adequate existing housing in the area	No direct, indirect, or cumulative impacts since the site would not be developed
Social and public services	Negligible direct, indirect, and cumulative impacts on school facilities since enrollment in local school districts is not anticipated to increase	Negligible direct, indirect, and cumulative impacts on school facilities since enrollment in local school districts is not anticipated to increase	Negligible direct, indirect, and cumulative impacts on school facilities since enrollment in local school districts is not anticipated to increase	Negligible direct, indirect, and cumulative impacts on school facilities since enrollment in local school districts is not anticipated to increase	No direct, indirect, or cumulative impacts since the site would not be developed	Negligible direct, indirect, and cumulative impacts on school facilities since enrollment in local school districts is not anticipated to increase	No direct, indirect, or cumulative impacts since the site would not be developed
Special Designations		•	-				
WAs and WSAs	No direct impacts on WAs or WSAs since none are located within the project site; short-term and long-term indirect impacts on the wilderness values select WAs and WSAs by changing the natural and undisturbed landscape; incremental contribution to adverse cumulative impacts on special-designation areas	No direct impacts on WAs or WSAs since none are located within the project site; short-term and long-term indirect impacts on the wilderness values select WAs and WSAs by changing the natural and undisturbed landscape; incremental contribution to adverse cumulative impacts on special-designation areas	No direct impacts on WAs or WSAs since none are located within the project site; short-term and long-term indirect impacts on the wilderness values select WAs and WSAs by changing the natural and undisturbed landscape; incremental contribution to adverse cumulative impacts on special-designation areas	No direct impacts on WAs or WSAs since none are located within the project site; short-term and long-term indirect impacts on the wilderness values select WAs and WSAs by changing the natural and undisturbed landscape; incremental contribution to adverse cumulative impacts on special-designation areas	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct and indirect short-term and long-term adverse impacts if other solar energy projects are constructed; potential for incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed
ACECs	Short-term and long-term indirect impacts on the Pisgah Crater ACEC because of the closure of existing OHV routes on the project site, reduced access to open space and potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	Short-term and long-term indirect impacts on the Pisgah Crater ACEC because of the closure of existing OHV routes on the project site, reduced access to open space and potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	Negligible impacts on the Pisgah Crater ACEC due to fewer closures of OHV routes; direct and indirect impacts because of the potential for desert tortoise relocation	Short-term and long-term indirect impacts on the Pisgah Crater ACEC because of the closure of existing OHV routes on the project site, reduced access to open space and potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
DWMAs	Direct and indirect impacts on the Ord Rodman DWMA because of the potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	Direct and indirect impacts on the Ord Rodman DWMA because of the potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	Direct and indirect impacts on the Ord Rodman DWMA because of the potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	Direct and indirect impacts on the Ord Rodman DWMA because of the potential translocation of desert tortoise into this area; incremental contribution to adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed that require relocation of desert tortoises to the DWMA	No direct, indirect, or cumulative impacts since the site would not be developed

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Donated and acquired lands	Short-term and long-term adverse direct and indirect impacts on resources for which the land was acquired or accepted by donation; incremental contribution to adverse cumulative impacts	Short-term and long-term adverse direct and indirect impacts on resources for which the land was acquired or accepted by donation; incremental contribution to adverse cumulative impacts	No direct, indirect, or cumulative impacts on donated and acquired lands due to avoidance of donated and acquired lands	No direct, indirect, or cumulative impacts on donated and acquired lands due to avoidance of donated and acquired lands	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed that develop on donated and acquired lands	No direct, indirect, or cumulative impacts since the site would not be developed
Traffic and Transportat	ion						
Construction impacts	Direct and indirect impacts due to increased construction workforce traffic and construction truck traffic; negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities	Direct and indirect impacts due to increased construction workforce traffic and construction truck traffic; negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities	Direct and indirect impacts due to increased construction workforce traffic and construction truck traffic; negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities	Direct and indirect impacts due to increased construction workforce traffic and construction truck traffic; negligible cumulative impacts because the number of workers needed for operations of all of these projects is modest compared to road capacities	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Operation impacts	Negligible direct and indirect impacts on traffic due to a low increase in operational traffic	Negligible direct and indirect impacts on traffic due to a low increase in operational traffic	Negligible direct and indirect impacts on traffic due to a low increase in operational traffic	Negligible direct and indirect impacts on traffic due to a low increase in operational traffic	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Effects on BLM routes	Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts	Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts	Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts	Long-term adverse direct and indirect impacts on travel in the project vicinity because of BLM route closures; incremental contribution to adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Visual Resources			,		,	-	,
	very high magnitude of change to the visual landscape; indirect adverse impact of encouraging additional subsequent development of similar industrial character in the area; incremental	very high magnitude of change to the visual landscape; indirect adverse impact of encouraging additional subsequent development of similar industrial character in the area; incremental	Direct adverse impacts due to the very high magnitude of change to the visual landscape; indirect adverse impact of encouraging additional subsequent development of similar industrial character in the area; incremental contribution to adverse cumulative impacts	Direct adverse impacts due to the very high magnitude of change to the visual landscape; indirect adverse impact of encouraging additional subsequent development of similar industrial character in the area; incremental contribution to adverse cumulative impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed

Resource Element	Alternative 1: Proposed Action	Alternative 1a: Agency Preferred Alternative (Environmentally Preferred Alternative)	Alternative 2: Reduced Acreage Alternative	Alternative 3: Avoidance of Donated and Acquired Lands Alternative	Alternative 4: No Action: Deny Calico Solar Project ROW Grant/ No CDCA Plan Amendment	Alternative 5: LUP Amendment: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Allow other Solar Energy Projects on the Project Site	Alternative 6: LUP Amendment Alternative: Deny Calico Solar Project ROW Grant/Amend CDCA Plan to Prohibit other Solar Energy Projects on the Project Site
Hydrology and Water	 Resources	1	<u>l</u>		1	- <b>L</b>	<u> </u>
Hydrology	Adverse, long-term direct and indirect impacts on surface hydrology due to a loss of on-site ephemeral drainages; adverse, long-term direct and indirect impacts on desert wash communities downstream of the project; potential adverse, long-term indirect impacts due to an increase in standing water onsite; incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed	Adverse, long-term direct and indirect impacts on surface hydrology due to a loss of on-site ephemeral drainages; adverse, long-term direct and indirect impacts on desert wash communities downstream of the project; potential adverse, long-term indirect impacts due to an increase in standing water onsite; incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed	Adverse, long-term direct and indirect impacts on surface hydrology due to a loss of on-site ephemeral drainages; adverse, long-term direct and indirect impacts on desert wash communities downstream of the project; potential adverse, long-term indirect impacts due to an increase in standing water onsite; incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed	Adverse, long-term direct and indirect impacts on surface hydrology due to a loss of on-site ephemeral drainages; adverse, long-term direct and indirect impacts on desert wash communities downstream of the project; potential adverse, long-term indirect impacts due to an increase in standing water onsite; incremental contribution to adverse cumulative soil erosion and stormwater impacts within the Newberry Springs watershed	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Groundwater resources	Negligible, long-term direct and indirect impacts on groundwater due to localized drawdown of the water table; negligible cumulative impacts due the size and capacities of the affected groundwater basins; the existing and proposed future uses of groundwater in the basins; and the relatively low water use requirements of the proposed action	Negligible, long-term direct and indirect impacts on groundwater due to localized drawdown of the water table; negligible cumulative impacts due the size and capacities of the affected groundwater basins; the existing and proposed future uses of groundwater in the basins; and the relatively low water use requirements of this alternative	Negligible, long-term direct and indirect impacts on groundwater due to localized drawdown of the water table; negligible cumulative impacts due the size and capacities of the affected groundwater basins; the existing and proposed future uses of groundwater in the basins; and the relatively low water use requirements of this alternative	Negligible, long-term direct and indirect impacts on groundwater due to localized drawdown of the water table; negligible cumulative impacts due the size and capacities of the affected groundwater basins; the existing and proposed future uses of groundwater in the basins; and the relatively low water use requirements of this alternative	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Jurisdictional waters	Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts	Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts	Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts	Adverse, long-term direct and indirect impacts on California State jurisdictional waters; incremental contribution to cumulative adverse impacts	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed	No direct, indirect, or cumulative impacts since the site would not be developed
Floodplains	No direct, indirect, or cumulative adverse impacts on floodplains are expected due to the lack of FEMA designated floodplains onsite; detention/debris basins would completely retain flood flows resulting from a 100-year flood	No direct, indirect, or cumulative adverse impacts on floodplains are expected due to the lack of FEMA designated floodplains onsite; detention/debris basins would completely retain flood flows resulting from a 100-year flood	No direct, indirect, or cumulative adverse impacts on floodplains are expected due to the lack of FEMA designated floodplains onsite; detention/debris basins would completely retain flood flows resulting from a 100-year flood	No direct, indirect, or cumulative adverse impacts on floodplains are expected due to the lack of FEMA designated floodplains onsite; detention/debris basins would completely retain flood flows resulting from a 100-year flood	No direct, indirect, or cumulative impacts since the site would not be developed	Potential for direct, indirect, and cumulative impacts if other solar energy projects are constructed  Emergency Management Agency; G	No direct, indirect, or cumulative impacts since the site would not be developed

Table Key: ACEC = area of critical environmental concern; BLM = Bureau of Land Management; CDCA = California Desert Conservation Area; DWMA = designated wildlife management area; FEMA= Federal Emergency Management Agency; GHG=greenhouse gas; HA=herd area; HMA = herd management area; LUP = land use plan; OHV = off-highway vehicle; PM<sub>10</sub> = inhalable particulate matter; WA = wilderness area; WSA = wilderness study area.

#### **ES.9** Public and Agency Participation

The BLM's NEPA process provides opportunities for the public and agencies to participate and consult in the scoping of the environmental analysis, and in the evaluation of the technical analyses and conclusions of that analysis.

Scoping activities for the project were conducted by the BLM in compliance with the requirements of NEPA. Many of these scoping activities were conducted jointly with the CEC. The BLM's scoping activities are described in detail in a final scoping report, which is available from the BLM. The scoping report documents the Notice of Intent, the scoping meetings, workshops, and the comments received during scoping. The issues raised during scoping are summarized in Chapter 5.

#### ES.9.1 Areas of Controversy

Several areas of controversy related to the Calico Solar Project were identified from comments received from agencies, organizations, Native Americans and tribal governments, and members of the general public during the scoping process. These include:

- Opposition to the placement of a large solar project on essentially undisturbed desert land.
- Opposition to the overall number of renewable energy projects in the western United States.
- Concern regarding the impacts of this project on biological, cultural, and visual resources.
- Concern regarding the closure of BLM routes for renewable energy development.
- Concerns regarding the viability of the proposed solar technology.

## ES.9.2 Summary of Comments and Responses on the Staff Assessment/Draft Environmental Impact Statement

The NOA of the SA/DEIS was published in the Federal Register by the EPA on April 2, 2010. Publication of this NOA for the SA/DEIS initiated the 90-day public comment period, which extended until July 1, 2010. Appendix G includes an overview of the written comments received by the BLM and CEC on the SA/DEIS, and the BLM's responses to the individual comments.

#### **ES.10** Agency Coordination

Many federal, state, and local agencies were consulted and provided comments on the proposed project as part of this NEPA process.

#### **U.S. Army Corps of Engineers**

The U.S. Army Corps of Engineers (USACE) has jurisdiction to protect water quality and wetland resources under Section 404 of the Clean Water Act. Under that authority, the USACE reviews proposed projects to determine whether they may impact such resources, and/or be subject to the requirements of a Section 404 permit. Throughout the SA/DEIS process, the BLM, CEC, and the Applicant provided information to the USACE to assist them in making a determination regarding their federal jurisdiction and need for a Section 404 permit. Subsequent to the publication of the SA/DEIS, the USACE determined that no waters of the United States are present on the project site (Appendix F).

#### U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) has jurisdiction to protect threatened and endangered species under the federal Endangered Species Act (ESA). Formal consultation with the USFWS under Section 7 of the ESA is required for any federal action that may adversely affect a federally listed species. The site is known to be occupied by desert tortoise, which is currently listed as threatened under the federal ESA. The USFWS is also associated with the implementation of the Bald and Golden Eagle Protection Act as well as the Migratory Bird Treaty Act.

## State Water Resources Control Board/Regional Water Quality Control Board

The State Water Board works in coordination with nine Regional Water Quality Control Boards (RWQCB) to preserve, protect, enhance and restore water quality. The RWQCB have authority to protect surface water and groundwater. Throughout the SA/DEIS process, the BLM, CEC, and the Applicant have invited the RWQCB to participate in public scoping and workshops, and have provided information to assist the agency in evaluating the potential impacts and permitting requirements of the proposed project.

#### California Department of Fish and Game

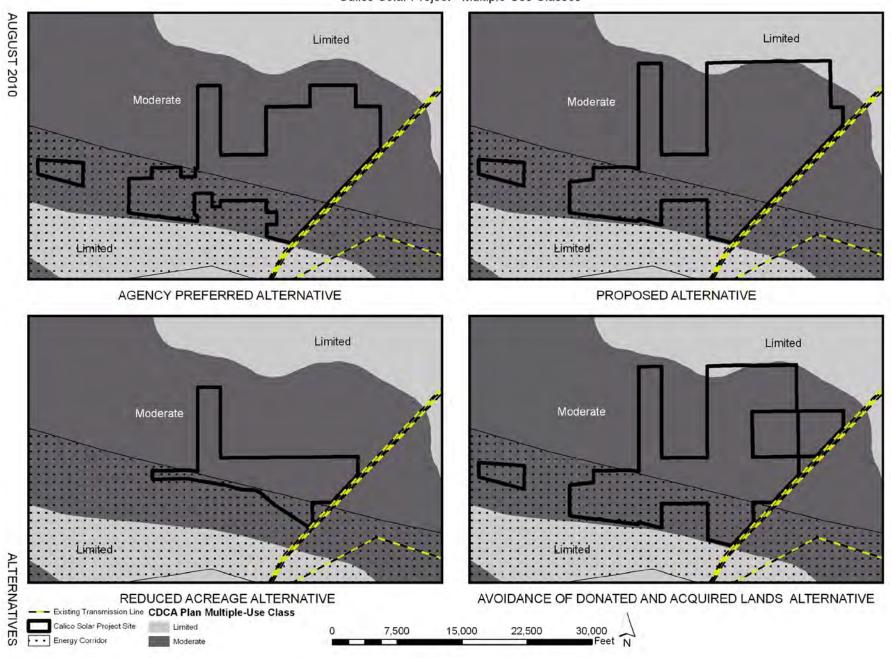
The California Department of Fish and Game (CDFG) have the authority to protect water resources through regulation of modifications to streambeds, under Section 1602 of the Fish and Game Code. The BLM, CEC, and the Applicant have provided information to the CDFG to

assist in their determination of the impacts to streambeds, and identification of permit and mitigation requirements. The CDFG also has the authority to regulate potential impacts to species that are protected under the California Endangered Species Act. The desert tortoise is listed under SESA. The CDFG has asserted its jurisdiction over 1,190 acres of streambeds with the proposed project site.

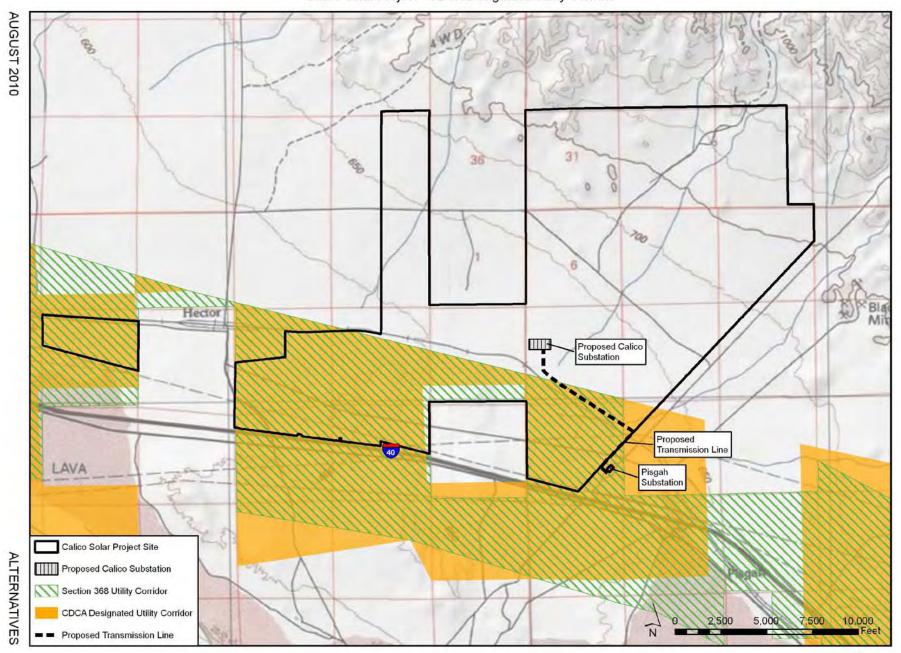
#### San Bernardino County

The revised Calico Solar Project site contains no private land under the jurisdiction of San Bernardino County. The BLM and CEC provided opportunities during scoping for the County to provide input to the environmental technical studies for the project.

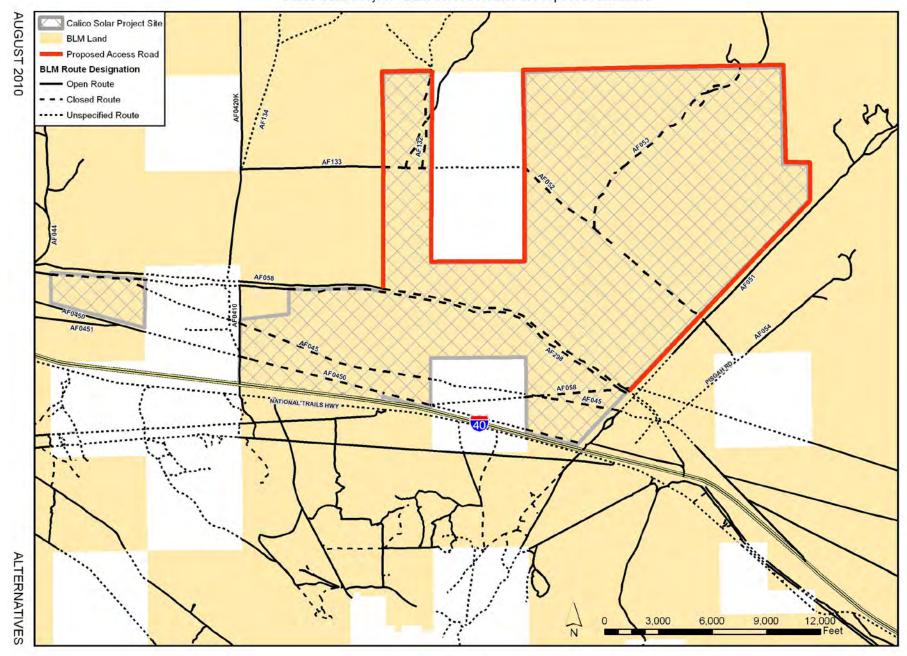
#### ALTERNATIVES - FIGURE 2-3 Calico Solar Project - Multiple-Use Classes



ALTERNATIVES - FIGURE 2-4
Calico Solar Project - CDCA Designated Utility Corridor

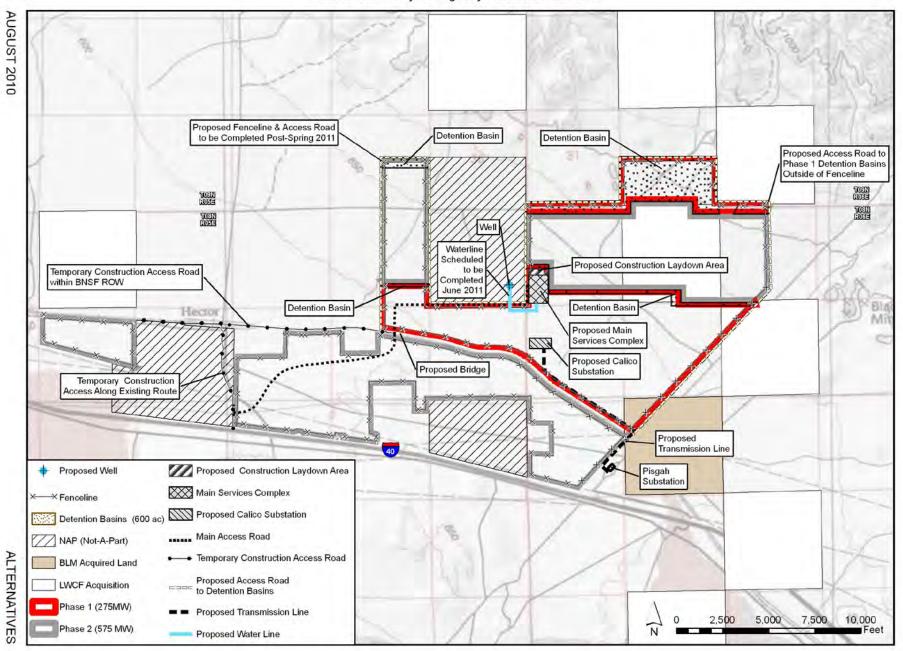


ALTERNATIVES - FIGURE 2-5
Calico Solar Project - BLM Closed Routes in Proposed Alternative

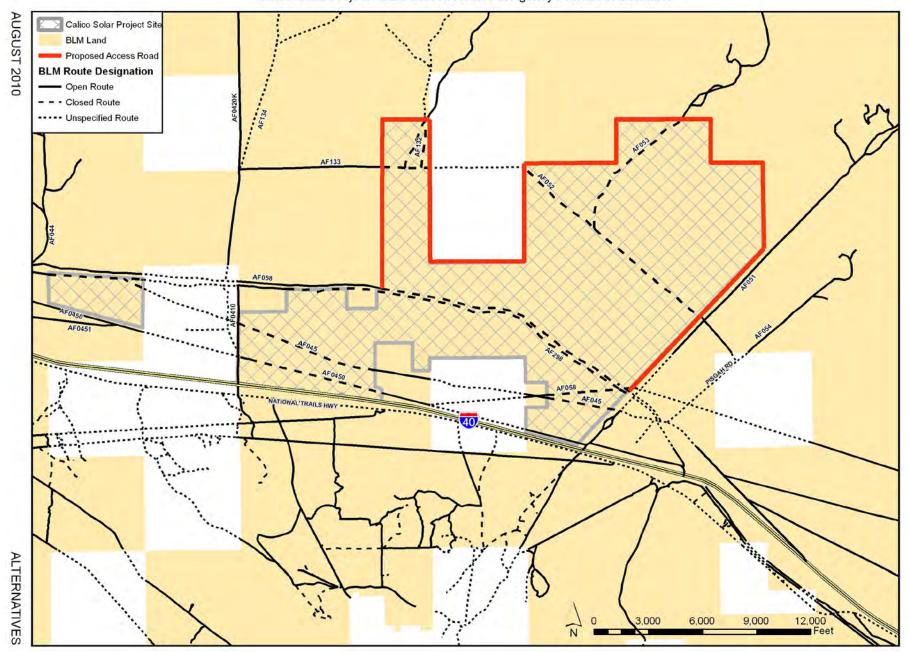


SOURCE: BLM, URS

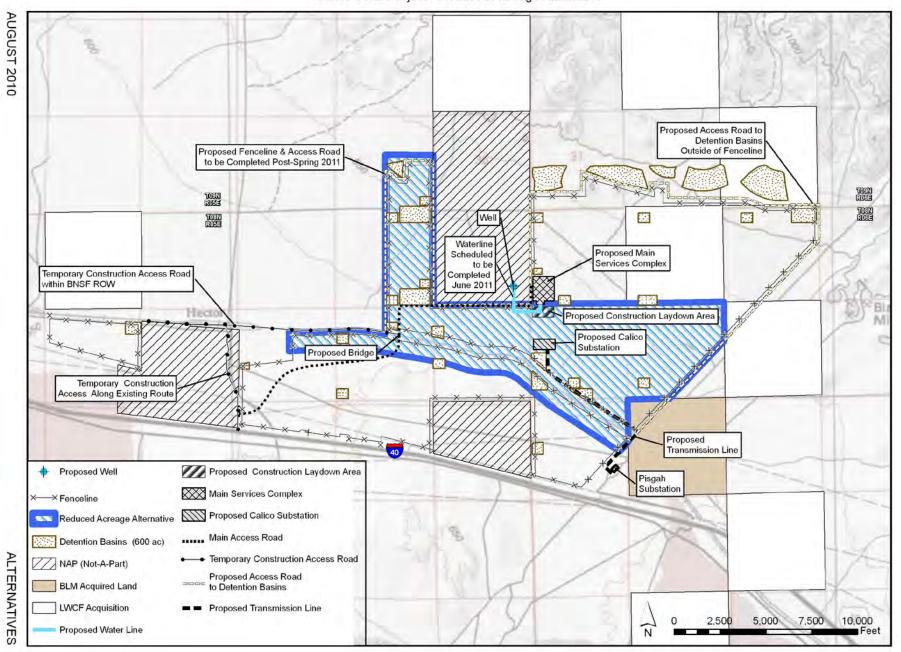
## ALTERNATIVES - FIGURE 2-6 Calico Solar Project - Agency Preferred Alternative



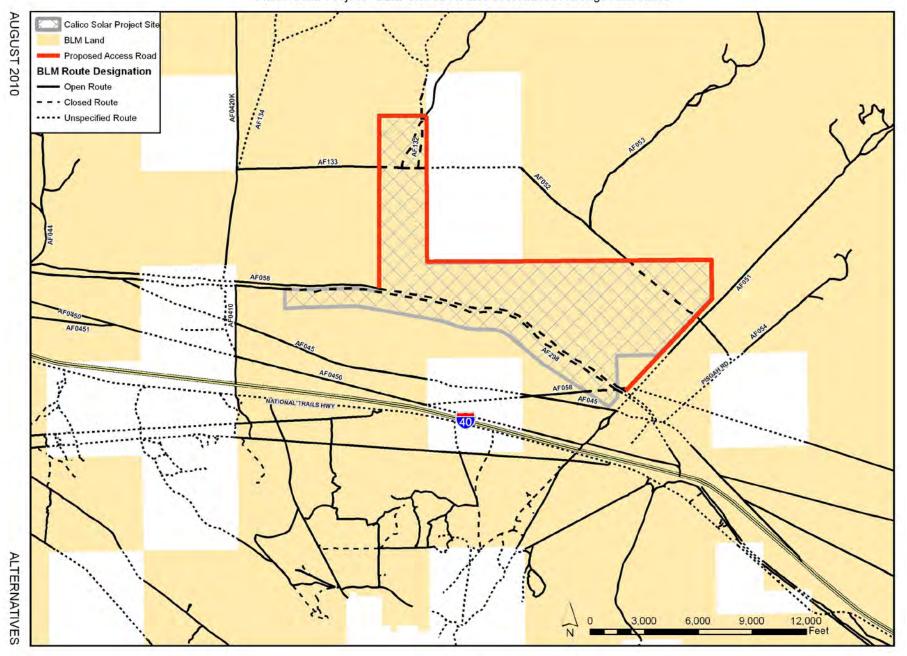
ALTERNATIVES - FIGURE 2-7
Calico Solar Project - BLM Closed Routes in Agency Preferred Alternative



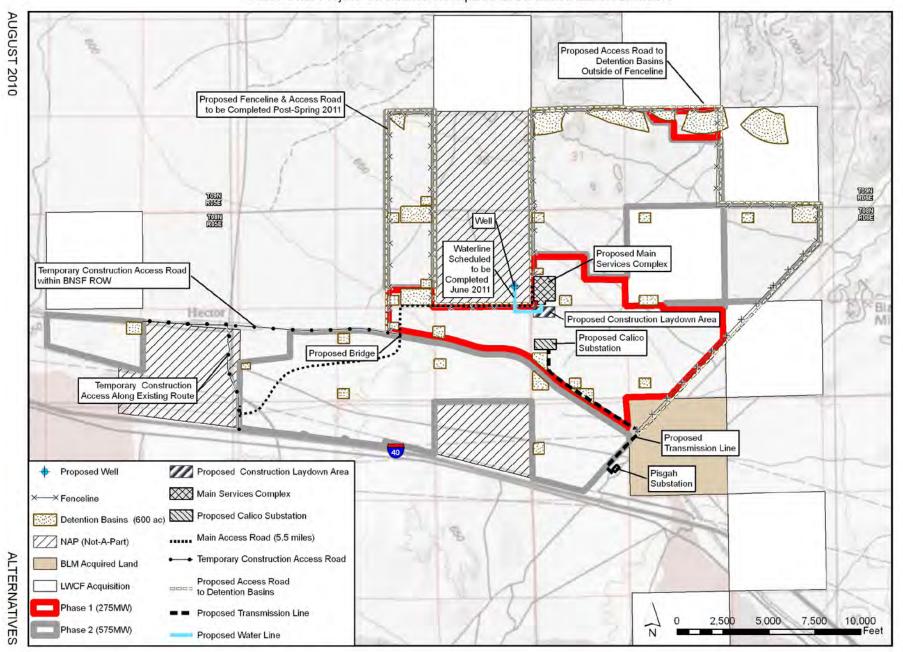
ALTERNATIVES - FIGURE 2-8
Calico Solar Project - Reduced Acreage Alternative



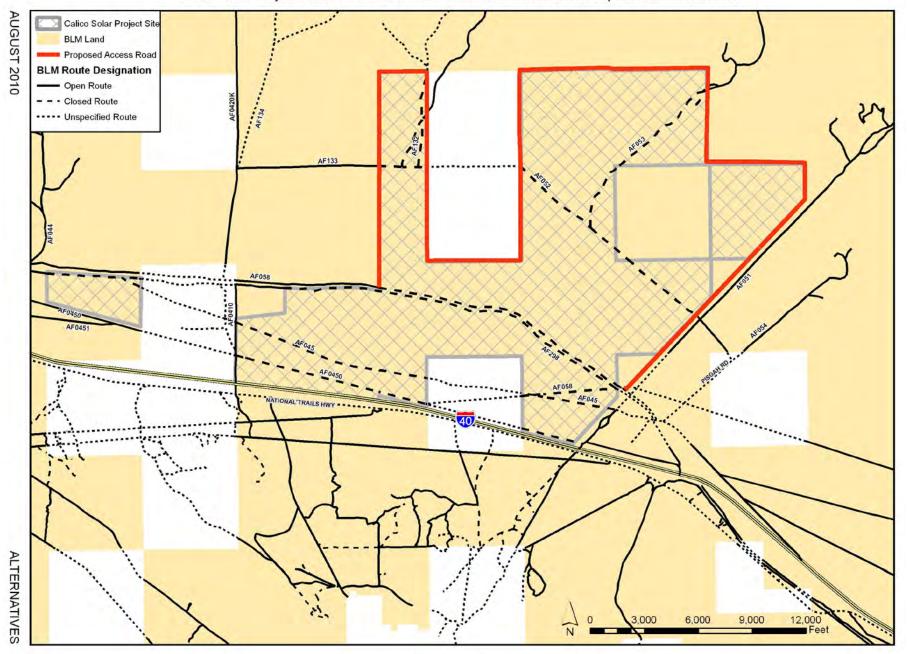
ALTERNATIVES - FIGURE 2-9
Calico Solar Project - BLM Closed Routes in Reduced Acreage Alternative



ALTERNATIVES - FIGURE 2-10
Calico Solar Project - Avoidance of Acquired and Donated Lands Alternative



ALTERNATIVES - FIGURE 2-11
Calico Solar Project - BLM Closed Routes in Avoidance of Donated and Acquired Lands Alternative



**ALTERNATIVES - FIGURE 2-12** 

#### Calico Solar Project - Private Land Alternative

